

MISSOURI CONSERVATIONIST

VOLUME 78, ISSUE 12, DECEMBER 2017
SERVING NATURE & YOU



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Barred owl

MISSOURI CONSERVATIONIST



ON THE COVER

In winter, bald eagles gather along the Mississippi River and other open-water areas to hunt.

NOPPADOL PAOTHONG
300mm lens, f/7.1
1/500 sec, ISO 800

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BLACK WALNUTS

Fantastic article on black walnuts [October, Page 22]. It's my favorite for cookies, bread, and muffins. I have made many pieces of furniture from its beautiful wood in my 60 years of woodworking.

Mike Kopp Sr.
via email

NUTS FOR BLACK WALNUTS

I really enjoyed your informational article about black walnuts [*Bountiful, Beneficial Black Walnuts*, October]. As a retired early childhood educator, I used the *Conservationist*, as well as *Xplor*, for the wonderful pictures to add to my curriculum.

Carolyn Foster via email

Your article brought back warm memories. Black walnuts were a source of income for my grandparents. Every fall, Grandpa would hitch up his mules to the wagon, and we would fill it to overflowing with black walnuts. We proudly rode on top of the bounty back to the house, where Grandma would have freshly baked homemade bread with soft homemade butter and recently canned fruit jams waiting for us. After having the nuts hulled, my grandparents dried, cracked, picked, and then sold the nut meat. Grandpa was a lifelong resident of Osage County and lived to 102. We purchased the wagon, and the wheels now sit in our backyard where I am reminded of those wonderful adventures.

Linda Blevins via email

GREETINGS FROM ALASKA

An expatriate Missourian since 1976 when we moved to Kodiak, I've continued to enjoy the *Missouri Conservationist* for many years. I was delighted to find that the presentation of the new format with the July issue was again graced with the beautiful photos by Noppadol Paothong and complemented by the articulate commentary in *Up Front* by your director, Sara Parker Pauley. Her references to the revisions of a wedding veil were particularly apropos and poignant [July, Page 3].

John D. Erkman, M.D. Anchorage, Alaska

MEMORIES

I lived on Peck Ranch in the mid 1960s while my dad, Willard Coen, was the area manager. I often



Black walnuts

roamed the nearly 25,000 acres, and sometimes accompanied my dad when he used the rocket nets to capture wild turkeys and transport them to other areas of the state for release.

My dad loved his job at Peck Ranch. I had such an incredible opportunity to be out in nature during those years, which shaped my goal of becoming a geologist and eventually working for Natural Resources until retirement in 2009.

The magazine just made me want to reach out to share some of my memories.

Larry Coen via email

FORMAT

I like the new style of your magazine. In the October issue, I liked the black walnuts story, *Up Front* with Sara Parker Pauley, and *Nature Lab*, too. *What Is It?* is also nice. I miss the cartoons every month. Keep up the good work.

Margaret Brill via email

The final cartoon ran June 2017, but you can still purchase Outside Jokes, a collection of more than 200 nature cartoons by Betty Chmielniak Grace, for \$8.75 plus tax and shipping. Call toll-free 1-877-521-8632, or order online at mdcnatureshop.com.

—THE EDITORS

CORRECTION

The shooting range on the August A. Busch Memorial Conservation Area is located 5 miles west of Highway 94, not Highway 95 as printed in the November issue [Page 5]. In addition, the range opened after 34 months of renovation and expansion, not 22 months.

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Want to see your photos in the Missouri Conservationist?

Share your photos on Flickr at
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email Readerphoto@mdc.mo.gov,
or include the hashtag #mdcdiscovernature
on your Instagram photos.



1

1 | Goldenrod in
winter by **Mike
Conley**, via Flickr

2 | Northern
cardinal at feeder
by **heygirl63**,
via Instagram

3 | Wasp gall by
Lee Southwick,
via email



2



3

MISSOURI CONSERVATION COMMISSIONERS



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Bedell



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Up Front

with Sara Parker Pauley

✱ My Granny Elma was the real deal — beautiful inside and out yet equally tough as nails. She survived the Depression and the loss of her father and several of her siblings at a young age. The mother of seven, she gardened as if for an army, hunted, ran cattle, could dance the Charleston with the best of them, and cooked like she meant it. In other words, she dirtied every dish in the kitchen, with flour and grease flying, in the process of putting the most delicious food on the table.

She was the one who taught me to handle guns safely, to read signs in the woods, and to hunt squirrels. It was a big day for me when she finally said, “You’re ready to hunt squirrels alone. I’m going back to the house. See if you can bring some squirrels back for dinner.” Oh, the anxious excitement and glorious adventure I had that afternoon roaming the Ozark woods with her .22. And when I got lucky enough to offer up two squirrels upon my return, her sweet smile was all the praise I needed. (Learn more about squirrel hunting from *Squirrel Dogs* on Page 16.)

I hope that someday I can live life full out like she did. Though I will never rival her in the delectable taste of meals prepared, I sure can dirty a kitchen in true Granny Elma fashion!

Sara Parker Pauley

SARA PARKER PAULEY, DIRECTOR
SARA.PAULEY@MDC.MO.GOV

The *Missouri Conservationist* (ISSN 0026-6515) is the official monthly publication of the Missouri Department of Conservation, 2901 West Truman Boulevard, Jefferson City, MO (Mailing address: PO Box 180, Jefferson City, MO 65102.) **SUBSCRIPTIONS:** Visit mdc.mo.gov/conmag, or call 573-522-4115, ext. 3856 or 3249. Free to adult Missouri residents (one per household); out of state \$7 per year; out of country \$10 per year. Notification of address change must include both old and new address (send mailing label with the subscriber number on it) with 60-day notice. Preferred periodical postage paid at Jefferson City, Missouri, and at additional entry offices. **Postmaster:** Send correspondence to Circulation, PO Box 180, Jefferson City, MO 65102-0180. Phone: 573-522-4115, ext. 3856 or 3249. Copyright © 2017 by the Conservation Commission of the State of Missouri.

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Printed with soy ink



mdc.mo.gov 3

Nature LAB

by Bonnie Chasteen

Each month, we highlight research MDC uses to improve fish, forest, and wildlife management.

WILDLIFE MANAGEMENT

Mountain Lion CSI

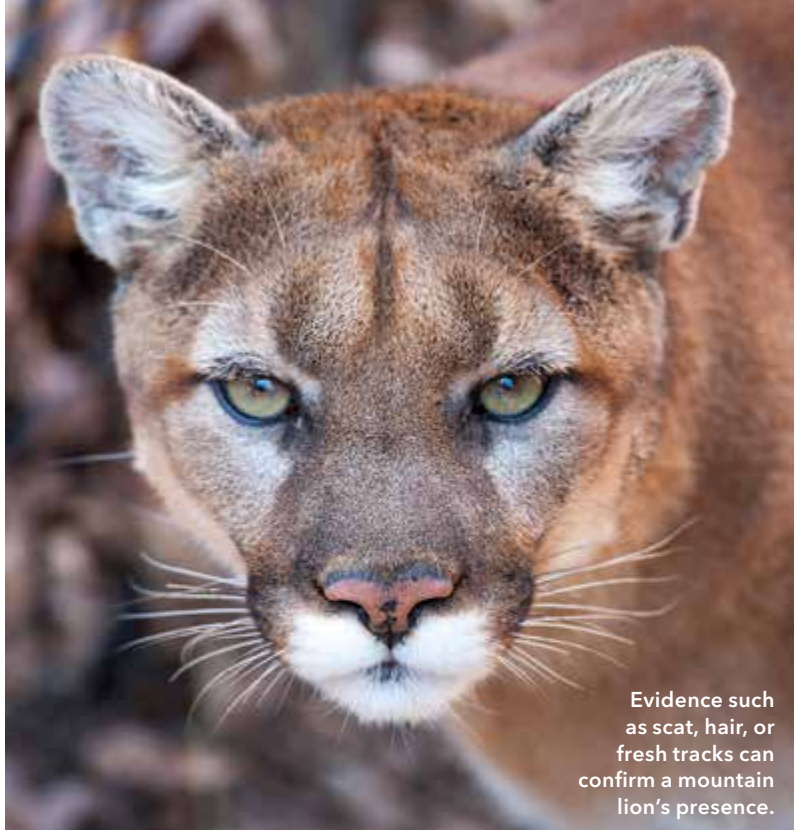
✳ When MDC's Mountain Lion Response Team receives a sighting report, they get to work.

"We get a lot of reports every year," said MDC Furbearer Biologist Laura Conlee, a member of the team. "If reports come with a clear photo or some kind of physical evidence — scat, hair, or a fresh track — we can confirm whether the animal was a mountain lion or something else."

When investigating photos, the team asks to see all the images in the sequence. "We're looking for the scale of the animal," Conlee said. "In many cases it's clearly a housecat, bobcat, or a dog. But if it's obviously a mountain lion — or if we just can't tell — we send a member of the team to take a look."

One technique the team uses is **life-sized cutouts** of a housecat, a bobcat, and a mountain lion positioned in the spot where the animal appears in the original photo. "This on-site comparison makes it easy to tell which cutout the photographed animal matches," Conlee said.

If the team finds physical evidence, such as hair, blood, or even a carcass, it collects a DNA sample and



Evidence such as scat, hair, or fresh tracks can confirm a mountain lion's presence.



MDC's Mountain Lion Response Team uses a variety of science-based methods to investigate sightings

sends it to a lab. "The DNA tells us the sex of the animal, where it likely came from, and whether it's been sampled or detected before," Conlee said.

Most of the time the lions coming into Missouri are transient, sub-adult males, although a female was documented in 2016. "We've never documented breeding within the state," Conlee said.

Mountain Lion Sightings at a Glance

3,000

Number of sightings reported since 1994



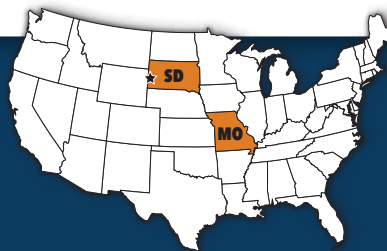
Number of sightings confirmed since 1994: 69

69



0 Number of females with cubs confirmed

0



Black Hills Region of South Dakota
Probable source of many mountain lions confirmed in Missouri

Mountain lions are protected under the *Wildlife Code of Missouri*

Learn more at mdc.mo.gov/mountain-lion

MAIN: NOPADOL PATHONG; SCAT: JIM RATHER; HAIR: DAVID STONNER; TRACKS: MDC FILE PHOTO

In Brief

News and updates from MDC



More than 2,000 bald eagles are typically reported in Missouri during winter.

DISCOVER NATURE THROUGH EAGLE DAYS

FROM DECEMBER THROUGH FEBRUARY, MISSOURI'S WINTER EAGLE WATCHING IS SPECTACULAR

➔ Because of the state's big rivers, many lakes, and abundant wetlands, Missouri is one of the leading lower 48 states for bald eagle viewing. Each fall, thousands of these great birds migrate south from their nesting range in Canada and the Great Lakes states to hunt in the Show-Me State. Eagles take up residence wherever they find open water and plentiful food.

MDC's Eagle Days events include live captive-eagle programs, exhibits, activities, videos, and guides with spotting scopes. Watch for eagles perched in large trees along the water's edge. View them early in the morning to see eagles flying and fishing. Be sure to dress for winter weather and don't forget cameras and binoculars.

- **Mound City:** Dec. 2 from 9 a.m. to 4 p.m. and Dec. 3 from 10 a.m. to 4 p.m. at Loess Bluffs National Wildlife Refuge. Call 816-271-3100 for more information.
- **Kansas City:** Jan. 6 from 9 a.m. to 3:30 p.m. and Jan. 7 from 10:30 a.m. to 3:30 p.m. at Smithville Lake Paradise Pointe Golf Course Clubhouse. Call 816-532-0174 for more information.
- **St. Louis:** Jan. 13 and 14 from 9 a.m. to 3 p.m. at the Old Chain of Rocks Bridge south of I-270 off Riverview Drive. Call 314-877-6014 for more information.
- **Springfield:** Jan. 20 from 9 a.m. to 4 p.m. and Jan. 21 from 12:30 to 4:30 p.m. at Springfield Conservation Nature Center. Call 417-888-4237 for more information.
- **Jefferson City:** Jan. 27 from 10 a.m. to 3 p.m. at Runge Conservation Nature Center. Call 573-526-5544 for more information.
- **Clarksville:** Jan. 27 from 9 a.m. to 4 p.m. and Jan. 28 from 10 a.m. to 3 p.m. at Lock and Dam 24 and Apple Shed Theater. Call 660-785-2420 for more information.
- **Schell City:** Feb. 3 from 9 a.m. to 3 p.m. at Schell City Community Center and Schell Osage Conservation Area. Call 417-876-5226 for more information.

Eagle Days continued on Page 6 »

EAGLE DAYS *(continued)*

Can't make an Eagle Days event? Other hot spots for winter eagle viewing on your own include:

- Lake of the Ozarks at Bagnell Dam Access, east of Bagnell
- Eagle Bluffs Conservation Area on Route K, southwest of Columbia
- Lock & Dam 20, Canton
- Lock & Dam 24 at Clarksville
- Lock & Dam 25, east of Winfield
- Mingo National Wildlife Refuge, northwest of Puxico
- Old Chain of Rocks Bridge, south of I-270, off of Riverview Drive, St. Louis
- Riverlands Environmental Demonstration Area, east of West Alton
- Schell-Osage Conservation Area, north of El Dorado Springs
- Smithville Lake, north of Kansas City
- Loess Bluffs National Wildlife Refuge, south of Mound City
- Stella at Moses Eagle Park
- Swan Lake National Wildlife Refuge, south of Sumner
- Table Rock Lake and Shepherd of the Hills Fish Hatchery, southwest of Branson
- Truman Reservoir, west of Warsaw

For more information, visit mdc.mo.gov/EagleDays.



Got a Question for Ask MDC?

Send it to AskMDC@mdc.mo.gov
or call 573-522-4115, ext. 3848.

Q. Recently a red fox started visiting all day. I think he may have mange; he just sits and scratches. Is there a chance he could transmit this disease to my two dachshunds?

➔ It does sound like you have encountered a fox with mange.

Mange — a class of skin diseases caused by parasitic mites that embed themselves in the skin or hair follicles — is a very real health concern for foxes and coyotes. Since providing veterinary care to wildlife would alter their lifespans, we typically recommend allowing nature to take its course. Depending on the type of mange, the animal may recover if it can continue to find adequate food.

Mange can be transmitted to dogs. If you are concerned about domestic animals contracting this canine's disease, we recommend keeping your pets away from this fox and limiting its access to garbage and pet food. Feeding wild animals can cause them to become dependent on humans for food, which can lead to negative interactions between humans and wildlife.

For more information, visit short.mdc.mo.gov/Z5u.



Coyote with mange

Q. I'm hoping to give a lifetime fishing permit as a gift. Must I have the person's signature? I'd like to keep it a surprise.

➔ We want to help you keep it a surprise, too, so the gift-giver can sign a lifetime permit.

A great way to show a commitment to conservation, lifetime permits are available to Missouri residents only. These permits range in price from \$275 to \$400 for people ages 59 and younger — depending on the age of the recipient.

For people ages 60 and older, the price drops to \$35. All Missouri residents age 65 or older are exempt from having to purchase fishing permits, but trout permits are still required. So a lifetime permit may still be beneficial to seniors.

The lifetime permit carries the same privileges as the resident fishing permit and the trout permit, and they are not available online or from permit vendors.

To find out how to purchase a permit, call 573-522-0107 or email lifetime.permit@mdc.mo.gov.

Q. At night, I often hear owls hooting and calling. How can I tell what species I'm hearing?

➔ One of the joys of being a bird watcher is being a bird listener.

Owls may call at any time of the day, but they are more vocal during twilight and on moonlit nights. December is a particularly good time to listen for two of Missouri's owls, since both great horned owls and barred owls are courting this month.



Great horned owl

Barred owl

Great horned owls proclaim their territories with muted, classic hoots in a stuttering rhythm of “hoo-h’HOO-hoo-hoo.” If you hear a duet of alternating calls between a breeding pair, the female’s voice will be higher-pitched than the male’s.

The barred owl’s series of hoots is often described as, “Who cooks for you? Who cooks for you all?” But during breeding season, they also issue a raucous combination of cackles, hoots, caws, and gurgles.

One of the easiest ways to hear an owl is to drive to a quiet place in the country away from car traffic. Open land, woodlands, forests, and forest edges where different habitats meet are good places to hear them. Owls will spend the day in the woods, but will forage at night in nearby fields.

By listening to recordings of these birds, you soon will be able to distinguish their calls. A good resource is allaboutbirds.org, which features an extensive audio catalog of birds’ songs.

AGENT ADVICE

from

Benny Pryor

REGIONAL SUPERVISOR —
NORTHEAST REGION

It’s a busy time of year in Missouri’s woods. Whatever species you prefer to hunt or method you enjoy using, Missouri has a season for you! On any given day, you may see a rabbit hunter with his dogs, a sportsman chasing squirrels from tree to tree, or a duck hunter in pursuit of a flock in mid-flight. Add to this alternative methods portion of firearms season — Dec. 23 to Jan. 2 — and you have a packed landscape. With many seasons occurring at once, safety is of utmost importance. Be mindful of your surroundings and share our wide-open spaces for a successful hunt. For more information on the alternative season, allowable methods, and valid permits, visit Page 30 of the 2017 *Fall Deer & Turkey Hunting Regulations and Information* booklet at short.mdc.mo.gov/Z53.

For current seasons, see *Outdoor Calendar* on Page 33.



What IS it?

Can you guess this month’s natural wonder?

The answer is on Page 9.



INVASIVE SPECIES

AUTUMN OLIVE

Invasive nonnative plants consume wildlife habitat and compete with crops. Do what you can to control invasive species when you landscape, farm, hunt, fish, camp, or explore nature.

What Is It?

Also known as Japanese silverberry, autumn olive (*Elaeagnus umbrellata*) is a multistemmed shrub that produces light-yellow flowers and bears fruit that ripens from yellow to red. It can grow 20-25 feet tall.

Where Is It?

Recorded in 32 Missouri counties, but due to extensive planting, it's thought to be present statewide.

Why It's Bad

"Like many invasive plants, autumn olive has high seed production and prolific growth and is readily spread by birds. It also has nitrogen-fixing root nodules," said Nate Muenks, habitat management coordinator. "These attributes allow it to quickly invade a variety of areas and outcompete desirable vegetation in prairies, savannas, and woodlands, as well as livestock forage pasture."

How to Control It

Pull young seedlings and sprouts by hand in early spring. Winter is a great time to kill mature shrubs. MDC experts recommend cutting the plant off at the main stem at ground level and applying herbicide directly to the cut stump to kill the roots and prevent resprouting.



For more information about autumn olive and how to remove it, visit short.mdc.mo.gov/Z5x



MAIN AND SHRUB: JAMES R. ALLISON, GEORGIA DEPARTMENT OF NATURAL RESOURCES, BUGWOOD.ORG; FRUIT: PENNSYLVANIA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES - FORESTRY ARCHIVE, BUGWOOD.ORG; FLOWERS: NANCY LOEWENSTEIN, AUBURN UNIVERSITY, BUGWOOD.ORG



Prolific fruit is widely spread by birds.



Yellow flowers appear in April and May.



Autumn olive grows quickly and shades out native plants.

MDC LAUNCHES TEACHER PORTAL

Missouri teachers can find conservation-related educational resources online through MDC's new Discover Nature Schools (DNS) Teacher Portal. The department created the website to give teachers easy access to classroom materials, grant opportunities, and interactive learning activities as well as a chance to connect with other teachers and MDC staff.

The new portal is available to Missouri teachers who participate or have an interest in DNS. The DNS program began in 2007 and provides instructional materials about Missouri's native plants, animals, and habitats for teachers and students from pre-K through high school. It also provides grant funding for classroom supplies and field trips in nature. There are more than 1,600 Missouri schools that take part in the program.

The new DNS portal allows teachers to:

- Download free instructional materials
- Access grant applications
- Request class sets of student books and science notebooks
- Order educational posters and MDC publications
- Register for free teacher workshops
- Post questions and ideas to the educational bulletin board for teacher collaboration

Learn more about the Teacher Portal at mdc.mo.gov/teachers. For more information about DNS, visit mdc.mo.gov/education.

GIVE HOLIDAY GIFTS FROM MDC NATURE SHOPS

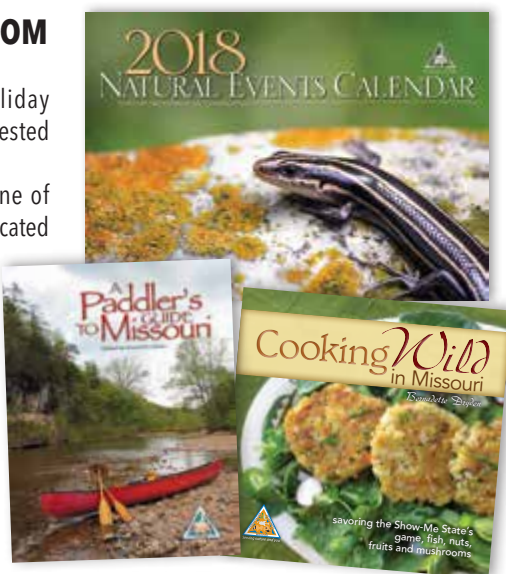
MDC's Nature Shop makes holiday shopping a breeze for anyone interested in nature-themed gifts.

Holiday shoppers can visit one of our Nature Shops, conveniently located inside our nature centers in Kirkwood, Cape Girardeau, Springfield, Kansas City, Blue Springs, and Jefferson City, or browse our selection online.

One of the most popular holiday gifts is the MDC annual *Natural Events Calendar* with 12 months of stunning photos and daily notes about a wide variety of wild happenings throughout the year. Get it from MDC's online Nature Shop, nature centers, or regional offices for \$9 plus tax. Another is the *Cooking Wild in Missouri* cookbook for \$15 plus tax. Canoeists, kayakers, and floaters will find *A Paddler's Guide to Missouri* a helpful reference for \$8 plus tax.

Conservation makes Missouri a great place to hunt and fish so give the gift of hunting and fishing permits. Buy Missouri hunting and fishing permits from numerous vendors around the state, online at mdc.mo.gov/buypermits, or through MDC's free mobile apps, MO Hunting and MO Fishing, available for download through Google Play for Android devices or the App Store for Apple devices.

To browse the online Nature Shop, visit mdcnatureshop.com. You can also place orders by phone at 877-521-8632.



What IS it?

SILVER-HAIRED BAT

Missouri is home to 14 species of bats, all of which are relatively small, with prominent ears and wings of soft, generally naked skin. The distinct feature of a silver-haired bat (*Lasionycteris noctivagans*) is its fur, which is black with silvery-white tips. Though secure globally, this little bat is vulnerable in Missouri.

Photograph by Noppadol Paothong



MOFEP



A 100-YEAR FORESTRY STUDY

WHAT WE HAVE LEARNED SO FAR | BY ELIZABETH OLSON



Dappled sunlight reaches the forest floor through redbud, black gum, oak, and hickory leaves. The Missouri Ozark Forest Ecosystem Project (MOFEP) is one of the most comprehensive forest management studies in North America.

PHOTOGRAPH BY DAVID STONNER

In the heart of the Ozarks, where the Black, Current, and Eleven Point rivers dissect steep, forested hillsides, lies the **Missouri Ozark Forest Ecosystem Project (MOFEP)**, one of the most comprehensive forest management studies in North America. It can be difficult to imagine that just a few generations ago, this area looked entirely different. The forests in Missouri were in bad shape. From the 1890s through the 1920s, exploitive timber harvesting removed much of the trees. What remained was a degraded landscape, largely denuded of wildlife, plants, soils, and nutrients — essential components of a forested ecosystem.

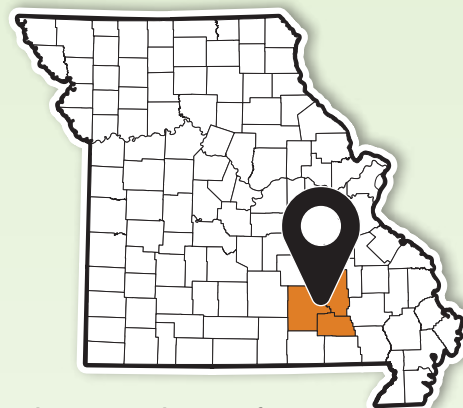
Since that time, our beautiful Missouri forests, once nearly vanished because of overuse, now cover more than 15 million acres due to improved conservation practices. Land cleared at the turn of the century has regenerated and now supports many uses. But the sustainable use of our forests will require a deep understanding of the effects that tree harvesting has on the ecosystem.

MOFEP is Born

In the 1980s, wildlife biologists became concerned about the effects of tree harvesting on migratory songbirds. In areas of the Midwest where forests were fragmented into small patches, bird researchers were seeing increased nest parasitism by brown-headed cowbirds and reduced nest success of summer breeding birds. They wondered if birds were facing the same problems in parts of Missouri where timber harvests occurred in extensive and contiguous forests. Foresters were also facing questions of their own. How can they best manage forests to provide wood products as well as benefit wildlife, provide for public recreation, and keep forests healthy well into the future?

To answer these questions, biologists and foresters from MDC, together with many other collaborators, designed a 100-year study, called MOFEP.

One of the first challenges was to find the best location for the project. They wanted MOFEP to be on state-owned land and on forests that had not been cut in at least 40 years. The answer was found in the heavily forested Ozarks in southeastern Missouri. Nine study sites, each about 1,000 acres, are located on the Current River Conservation Area in Shannon and Reynolds counties and the Peck Ranch Conservation Area in Carter County.



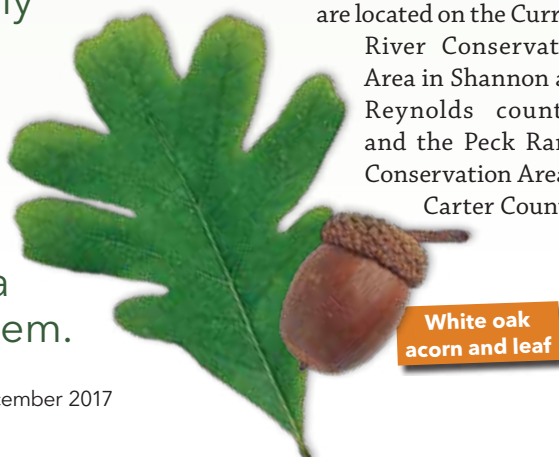
The nine study sites of MOFEP are located in Shannon, Reynolds, and Carter counties in the heavily forested Ozarks of southeastern Missouri.

Three Forest Management Systems

A century ago, timber harvesting was primarily exploitive. Loggers cut all they could to fill human needs and wants, with little regard for future generations or ecosystem health. A positive shift occurred in recent generations. Now our forests are managed to benefit trees and soft-stemmed plants, game and nongame animals, while providing wood resources and economic sustainability to local communities.

MOFEP tests three common types of forest management — even-aged management, uneven-aged management, and no harvesting. Uneven-aged sites are made up of a mixture of tree ages, while even-aged sites are more of a patchwork with trees of similar ages grouped together.

In the even-aged system, trees are cut using two methods, thinning and regeneration harvests. Thinning removes smaller or unhealthy trees to give more growing space to the healthiest trees, and a regeneration harvest removes most trees on a 10-15 acre area. With the uneven-aged system, foresters select scattered individual trees or small groups of trees to cut. In no-harvest management, the forest is left alone to grow and mature naturally without intervention. Trees will die of natural causes, but are not cut down. Monitoring uncut forests provides a comparison of



White oak acorn and leaf



A technician measures the diameter of a black oak to determine how much it has grown. This data helps scientists understand the differences amongst the three forest management systems.

how the forest changes naturally to how it changes after tree harvesting.

By putting the three forest management systems into action in a controlled way, researchers observe the effects of forest management on different components of the ecosystem.

Projects and Findings

➔ OVERSTORY TREE PROJECT

Thousands of trees are measured on 648 plots scattered across the sites. Researchers record the species name and size of each tree growing within the plots. This data helps scientists understand how the density, size, growth rate, and reproduction of trees may change under different forest management systems.

Oaks and hickories are the dominant tree species in the Ozarks. After dying

naturally or being cut down, oaks and hickories make use of the resources left in the root system to send up stump sprouts. They are vigorous stump-sprouters, so foresters do not have to replant trees after a harvest. Through seeds and sprouts, these trees replant themselves. Many sprouts form at first, but usually only one or two become full-grown, mature trees.

Oak trees are the most common and are important species for deer, turkey, and humans. Early results show that

over time, even-aged management may favor scarlet and black oaks, while white and post oaks may be more abundant in uneven-aged management.

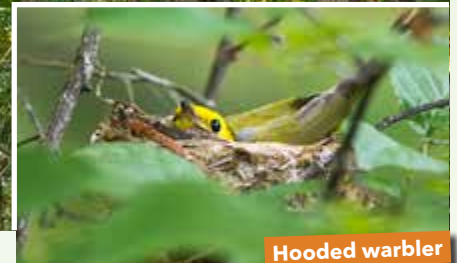
➔ GROUND FLORA

While trees by definition are the dominant part of forests, most of the plant diversity is on the ground layer. Botanists on MOFEP have documented over 500 species, including grasses and sedges, forbs, ferns, vines, shrubs, and tree seedlings. Their close observations led to new discoveries of populations of two rare species — heart-leaved tragia and Reznicek's sedge.

Ground flora diversity increased in even-aged and uneven-aged sites after harvests, due to increased sunlight reaching the forest floor. A positive



The author identifies beaked panic grass, one of over 50 species of grasses found on MOFEP.



Hooded warbler

outcome was the increase in woodland indicator species like native tick-trefoils, asters, and goldenrods. But nonnative invasive species, such as Japanese stiltgrass and tree-of-heaven, were encountered more often in harvested areas and are a cause for concern because they crowd out native species and don't contribute to wildlife forage as well as native plants.

Where larger groups of trees are cut, grapevines and blackberry shrubs flourish for about 10 years, before the young trees begin adding too much shade. The dense young stand of trees casts lots of low, deep shade, stunting the growth of ground plants for a number of years until the new forest thins out through natural mortality.

→ SONGBIRDS

Songbird plumage can be colorful and gorgeous to look at, but expert bird researchers probably use their ears more than their eyes. They identify bird species by their songs and are able

to estimate species population densities. They have also monitored nests and used mist netting to capture and band birds.

Paul Porneluzi, professor of biology at Central Methodist University, has worked with the MOFEP songbird project for many years.

"In order to provide the best habitat for the greatest number of bird species, we likely need a mix of all types of forest management," Porneluzi said.



Wood thrush

MOFEP researchers find and check bird nests to monitor rates of nest success and brood parasitism.

The most abundant songbird species are categorized into two groups — mature-forest species and early-successional species. Mature-forest species, such as the ovenbird, worm-eating warbler, and wood thrush, are a lot less abundant on MOFEP sites after tree harvesting. They continue to breed on sites where trees are harvested, but are most abundant on uncut sites.

Early-successional species, such as the indigo bunting, yellow-breasted chat, and hooded warbler, depend on the shrubby habitat after a harvest. They increased in density up to five to seven years after harvest, then decreased as the forest grew denser.

Even though cowbirds are common in the Ozarks, less than 5 percent of songbird nests are parasitized. And nest parasitism by cowbirds did not increase after harvest.

→ SMALL MAMMALS

Small mammals, like the white-footed mouse, eastern chipmunk, and south-eastern shrew, play an important role in the forest ecosystem. Their activities disperse plant seeds and fungi spores, and through tunneling, they aerate and mix the soil. They eat lots of insects, and in turn they are prey for larger animals like snakes and owls.

To capture and count these wily critters, researchers have to be creative. They use live traps baited with an enticing mixture of peanut butter and rolled oats. Small mammals find cover from predators in the dense plant growth and downed wood left on site after tree harvesting. Their populations gradually increased in even-aged sites up to five years after the harvest.

→ REPTILES AND AMPHIBIANS

Amphibians (salamanders, frogs, and toads) and reptiles (turtles, lizards, and snakes) play important roles in the function of forest ecosystems. As both predators and prey to other animals, they are links in forest floor food webs. Over 40 species have been recorded on MOFEP so far.

Researchers use live traps to capture amphibians and reptiles. A barrier called a drift fence, which is a piece of

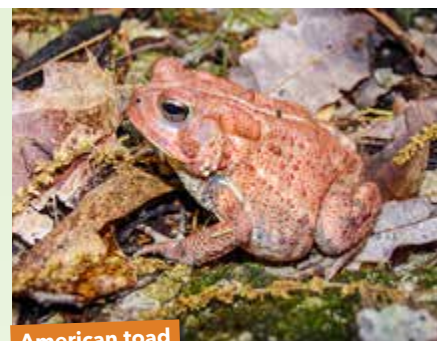


Eastern chipmunk

aluminum sheeting placed vertically into the ground, blocks the animal's path and guides it into a pitfall or funnel trap. A researcher checks the traps daily, records data about the animal type, sex, and size, and releases it unharmed.

Amphibians prefer moist and shady habitats, so populations of some species declined after cutting in both even-aged and uneven-aged sites. It took more than a decade for them to return to pre-treatment capture rates in harvested stands. Lizards showed an opposite

A western ratsnake is measured for body length.



American toad

response to timber harvests — they were more abundant in the open and sunny habitat created after harvests on even-aged sites. Different species of snakes responded differently to forest management, with a majority of species increasing in abundance after harvest.

Shelby Timm, resource staff scientist with MDC, says MOFEP is important because it is “designed to explore population changes over a large area. Overall, we found that few amphibian and reptile populations change when looking across the entire site. If we only looked at stand-level impacts, we wouldn't have the whole picture.”

Collaboration is Key

Making MOFEP a success requires the service and commitment of biologists from across the entire state. This 100-year project would not be possible if not for the cooperation of researchers from many conservation agencies and universities. Hundreds of students and recent graduates have worked on MOFEP and this valuable experience helped launch their careers.

MOFEP is breaking new ground by providing important information on different components of forest ecosystems, on a landscape scale, and over a long timeframe. MOFEP will provide the knowledge necessary to decide the best ways to ensure the survival of healthy forest ecosystems, while continuing to provide wood resources and support local timber industry. ▲

Liz Olson is a plant community ecologist for MDC, and she runs the ground flora project on MOFEP. She enjoys hiking and camping with her husband and dog.



SQUIPPEL

GOODS





Hunting squirrels with dogs is fun for the whole family

by David Hoover | photographs by David Stonner

When I was growing up, my small-game hunting experiences mainly consisted of chasing rabbits and quail with dogs. My squirrel hunting excursions were more limited. They generally involved donning camo, quietly walking the woods near my house, and searching for an unwary squirrel given away by a subtle flicker of fur among the treetops. When the spot-and-stalk tactic didn't work, I would find a big tree to sit against and do my best to imitate the sound of a squirrel eating a hickory nut, hoping to encourage any nearby squirrels to investigate and give up their cover. It had been a few years since I last chased any bushytails around the woods. So when Tom, a friend and quail-hunting buddy of mine, called and asked if I wanted to try my hand at squirrel hunting with dogs, I jumped at the opportunity.



Top: Austin holds Belle, an English pointer, while his grandfather, Tom, gets Zip out of the dog box. **Middle:** Daisy and Zip head toward the woods to start the hunt. **Bottom:** Marcus and Austin take a break after treeing their first squirrel of the day.



A Family Tradition

Tom and his 14-year-old grandson, Austin, brought along Zip, a 2-year-old mountain feist, when we drove out to meet Tom's friends on their family farm in north Missouri. Marcus, his wife, Jess, their two kids — and Zip's mom, Daisy — had made the trek out from New Jersey, something they do twice a year to visit family and friends. Marcus, an avid squirrel hunter, had learned to hunt on this farm and had harvested his first squirrel in the very woods we were about to hunt. The kids, 5-year-old Danielle and 3-year-old Robert, were a little too young to carry a gun while walking the woods, but they were just as excited as the adults to be going squirrel hunting.

Until today, Tom and Austin were the only two hunters I knew who hunted squirrels using dogs, so I asked Marcus about the popularity of this tradition. He said that back when the countryside was dotted with small subsistence family farms, most farmsteads likely had a dog from one of the common squirrel dog breeds. Not only were they used to hunt squirrels to supply the family with meat, they were good at protecting the hen house. As time went on and these small farms disappeared from the landscape, the squirrel-dog hunting tradition began to decline. Marcus also said he sees this tradition starting to gain in popularity as more folks are finding out how enjoyable it is.

As Daisy and Zip were getting reacquainted, Marcus and Jess got their kids ready for the hunt. It was obvious to me that the trips back to the family farm for Marcus and Jess were as much about instilling a love of the outdoors and conservation in their children as it was about hunting squirrels on the home place. Once the dogs were sufficiently reacquainted, they were ready for the hunt.

Timbering Out

As we walked down the wooded fence line leading to the woods, Marcus and Austin kept close eye on Daisy and Zip's every movement. We hadn't yet reached the woods when suddenly both dogs stopped and cocked their ears toward the trees and looked back as if to say, "You guys hear that?"

"What are they listening for?" I asked Marcus. "It may be a squirrel timbering out."

Marcus went on to explain that "timbering out" is when a squirrel hops from treetop to treetop in an attempt to elude detection or escape after being treed. Both dogs made a beeline to the woods. Once there, they searched the treetops to detect the slightest bit of movement. Not seeing any, they moved on, putting their noses

Daisy pinpoints the tree where a squirrel is located. Daisy will keep a close eye on the squirrel, alerting Austin if the squirrel is attempting to timber out.



to the ground in hopes of picking up the scent of a squirrel, all the while keeping eyes and ears focused on the treetops.

Suddenly Daisy got very excited and began yipping. She ran toward a big oak tree on the edge of a ravine, staring at the treetops. She circled the tree once and put her front feet on the trunk and began to bark, much the same way a baying coonhound does with a treed raccoon. "Let's go! They're on the wood," Marcus called to the group. After a couple of steps, Marcus turned and said, "That means they have a squirrel treed."

I picked up the pace, not wanting the squirrel to get away, or timber out. I looked back, hoping that Danielle and Robert would be able to keep up, and to my surprise they were right behind me. In fact, Jess was trying to keep up with them! As I reached the oak tree, Daisy was barking and leaning against the tree. Zip was close by, keeping an eye on the elusive squirrel. I heard Austin say, "I see him." Marcus told Austin to go ahead if he had a clear shot.

Austin aimed his shotgun and fired.



Mountain feist is just one of the many squirrel dog breeds, several of which have been around for hundreds of years. The most common squirrel dogs generally come from one of three breed classifications: curs, feists, and terriers. A quick internet search will help you find sources of squirrel dogs and squirrel hunting clubs in Missouri.

A Teachable Moment

Both Daisy and Zip made a mad dash to retrieve the harvested fox squirrel lying on a pile of oak leaves. When Daisy brought the squirrel to Marcus, he showed it to Danielle and Robert and explained the difference between a fox squirrel and a gray squirrel.

He also took a moment to praise the dogs for their efforts, and we grown-ups discussed how keeping cattle out of the woods and selectively cutting trees can provide quality wildlife habitat, particularly for squirrels and other small-game species.

Marcus got the kids involved in this discussion, too. "Taking good care of the woods helps make sure we have lots of squirrels to hunt every year," he said.

For their part, Danielle and Robert took the woods in stride. Neither complained much about the weeds and bushes they had to navigate through, all of which seemed to hit them at eye level. It was obvious they had, even at such a young age, spent many hours in the woods

chasing squirrels behind Daisy. They fully understood it was just part of the game.

We continued hunting and soon entered a large area of open woods with stately bur oak trees. Austin harvested another squirrel, with the assistance of Daisy and Zip, of course. We had hunted for nearly an hour and had seen some pretty nifty dog work when we decided to take a break. Marcus told us about the time, as an 8-year-old boy, he harvested his first squirrel with his dad in these woods.

"I also found a yellow jacket nest," he said, "but that wasn't nearly as much fun as getting my first squirrel."

We laughed and, with legs rested and spirits high, continued on until Daisy and Zip were on another squirrel. This time the bushytail was able to retreat into a cavity high in the tree, likely its den. Knowing that the squirrel wouldn't venture out until we were well out of sight, we moved on.

When temperatures started rising into the 50s and the winds picked up, we knew it was going to get more difficult for the dogs to find squirrels. We decided to cut across a harvested cornfield and make one last push through a wooded draw on our way back to the vehicles and a well-deserved lunch. About halfway down the draw, Daisy located a squirrel in a hard-to-reach tree along a deep ravine. With a little studying and careful navigation, Austin was able to bag his third squirrel of the morning, assisted by Daisy with a nice retrieve.

Enjoy Time Outdoors With Family and Friends

Back at the vehicles, we discussed the morning hunt and how well the dogs had performed. Danielle and Robert were happy to get another break and play with the dogs, which were no longer in hunt mode and receptive to the affection the kids gave them. After seeing the kids and adults interact with the dogs, it was clear that the hunt was not about how many squirrels we harvested. Rather, it was about enjoying time spent outdoors with family and friends, passing on a love of the outdoors and the conservation of an abundant and renewable wildlife resource. Squirrel hunting with dogs does not ensure you will harvest more squirrels than with any other hunting method, but it does allow for greater interaction among those in your hunting party. Instead of sitting motionless and quiet, you are afforded the



Danielle, Daisy, Robert, Zip, and Austin at the end of the morning's hunt.

Opposite page: Austin and his dog, Zip, are a seasoned squirrel hunting duo.

opportunity to have lively conversations while hunting. This provides an excellent opportunity to teach firearm safety and hunting ethics to children and beginning hunters, discuss wildlife management, and life in general.

As Jess rounded up the kids for a photo with Daisy and Zip, I thanked Tom and Marcus for inviting me to accompany them on such an enjoyable and unique hunting experience. Once all the photos were taken, dogs rounded up, and gear put away, all that was left was for Austin to clean the squirrels. As we watched him perform this task with efficiency obtained only from years of practice, I again thanked Tom and Marcus for a wonderful day afield and told them I might just have to get one of these squirrel dogs. That way, I could invite them to join me sometime for a day of squirrel hunting. ▲

Dave Hoover is MDC's small game coordinator. He enjoys hunting quail and other upland game birds with family and friends and promoting habitat management for the benefit of Missouri's small game.

Plenty of Squirrels, a Long Season, and Lots of Places to Hunt

Squirrel hunting has a rich history and remains popular among Missouri small-game hunters. It is also a great way to obtain locally sourced food while enjoying the outdoors and time spent with family and friends.

Tree squirrels are abundant throughout the state. Missouri is home to three species: the eastern gray squirrel, eastern fox squirrel, and the southern flying squirrel. Both the eastern gray squirrel and eastern fox squirrel are legal to hunt. With the exception of coyotes, squirrels have the longest season of Missouri's small-game species.



Fox squirrel



Gray squirrel

Properly licensed hunters can legally harvest squirrels from the fourth Saturday in May to Feb. 15.

If you don't have access to good squirrel hunting on private land, you can find plenty of conservation areas with good squirrel hunting statewide. Visit mdc.mo.gov/atlas, and use the activity menu to search for hunting.

THE HUNT

was not about how many squirrels we harvested. It was about enjoying time spent outdoors with family and friends.





1C

POP
1C

POP
FAS



Our Forests at Work

MISSOURI TREES BECOME PRODUCTS WE RELY ON EVERY DAY
by Holly Dentner

At the turn of the 19th century, Missouri's lumber boom made the state one of the leading producers in the nation. The frenzy of demand for wood and wood products was over by 1920, and our forests were depleted. Our woods took a huge hit back then, but they grow strong and plentiful now, covering almost one-third, or 15 million acres, of the state.

The creation of the Missouri Department of Conservation, and its commitment to Missouri's fish, forest, and wildlife, played a major role in bringing our forests back to life. That investment is still paying off now, as our forests have flourished for wildlife, our environmental well-being, and even the economy.

Forests are Big Business

Our trees and forests provide us with an abundance of benefits, from cleaning our water to increasing the property value of our homes. Missouri's forests still provide timber that's transformed into a variety of wood products shipped all over the world.

Missouri's wood products are big business. In 2015, wood, lumber, paper, and related industries contributed \$9.9 billion to the state's economy. These industries support over 47,000 jobs at a payroll of over \$2.3 billion. They are responsible for about \$715 million in taxes that help run our state and country, including \$91.5 million in state sales tax. These numbers include logging and sawmill operations, secondary wood products, furniture and cabinetmakers, log cabins, paperboard manufacturing, and more.

The state's primary wood products industry, as of 2016, is comprised of 380 sawmills, plus cooperage mills (for barrels), post and pole mills, charcoal plants, log brokers, and mills that produce other products like chips, pulp, cabin logs, and biomass products.

The majority of timber volume taken from Missouri's forests becomes saw logs for grade lumber, veneer, flooring, and pallets. Demand for stave logs for whiskey and wine barrels has boomed in recent years, making Missouri a major player in that industry. Even the "waste" from the state's timber processing becomes yet another widely used wood product, charcoal, which is produced in Missouri and ends up at barbecues across the country.

Oak is Missouri's Specialty

Red oak is the number-one tree processed at Rustic Wood Products in Perryville simply because it's the dominant species in the area. About 60 percent of the logs that pass through this family-owned sawmill are red oak, with white oak coming in second. Regardless of species, the logs processed at Rustic Wood Products are destined to become high-quality grade lumber.

"Anything in the interior of your home, from cabinets to flooring and furniture, could get its start here," said Kurt Rehagen, who manages the mill.

For high-grade lumber, only the outside portion of the log will do. The core of the log will have more defects, and will typically be processed at mills that specialize in providing lower-quality lumber for pallets, railroad ties, and other industrial uses.

At Rehagen's mill, the majority of the timber is purchased from independent

loggers, but the mill harvests their own trees, too. Rehagen says loggers have come a long way since the old days of completely wiping out our woods. They are learning the best practices that keep the forests and the industry thriving.

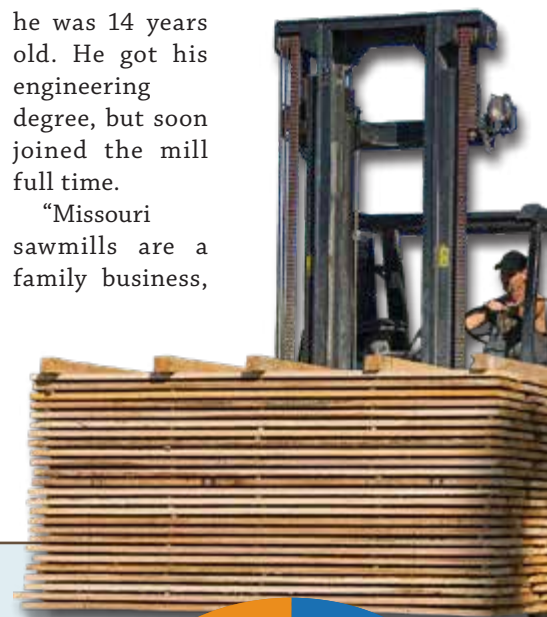
"In portions of the state, logging and sawmills are the only way to make a living," said Rehagen. "Missouri's wood products industry provides steady jobs, and we don't want to wipe out one of the only opportunities to put people to work."

Lumber from Rustic Wood Products is sent all over the country. Kurt says they do plenty of international business as well, sending oak, cottonwood, and sycamore to Mexico, red and white oak to China and Vietnam, and white oak to Europe.

Kurt's dad, Conrad, is a forester who started their mill in 1971. Kurt started working at the mill when he was 14 years old. He got his engineering degree, but soon joined the mill full time.

"Missouri sawmills are a family business,

PHOTOGRAPHS BY DAVID STONNER



Missouri Wood Products by the Numbers for 2015

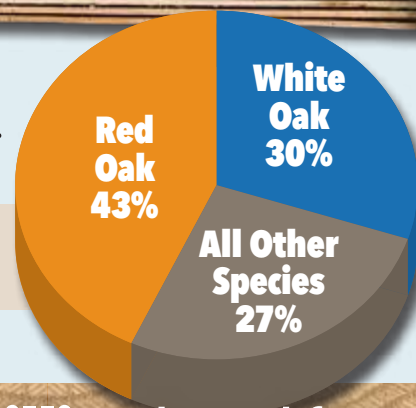
\$9.9 billion
contributed to
Missouri's
economy by wood
product industries

47,000

jobs supported
with a payroll of
over \$2.3 billion

\$91.5 million
in state sales tax

**Statewide
timber harvest
by species**



Sawmills in Missouri processed about **760 million** board feet of



Many wood products in your home could come from timber processed in Missouri.

passed down from one generation to the next,” said Kurt.

Like most sawmills in the state, nothing goes to waste. The chips, bark, shaving, and sawdust are used somewhere else. Some scrap becomes mulch, but a great deal becomes charcoal, and companies like Kingsford and Royal Oak have set up shop here to take advantage of the sawmill leftovers.

By the Numbers

Statewide, the department’s surveys show red oaks as the most common species harvested in Missouri, at 43 percent of the total volume. White oaks come in second, at 30 percent, followed by black walnut, hickory, and shortleaf pine.

“Missouri has plenty of great trees growing, and that makes us one of the leading lumber producers in the

nation,” said Kurt. “We’d like to keep it that way, too.”

In 2015, the primary sawmills in Missouri processed about 760 million board feet of lumber. That’s a pretty impressive number, considering that a single board foot is a piece of lumber 1-foot long by 1-foot wide by 1-inch thick. A million board feet equals about 143,000 two-by-fours, or about 50,000 pallets.

A million board feet equals about

143,000

two-by-fours, or about

50,000

pallets

lumber.



Is my Backyard Tree Worth a Fortune?

That big, solitary walnut tree in your backyard may be a beauty. You might even have two or three that are coming to the end of their natural lives. You’ve heard rumors that single walnut trees can sell for thousands of dollars. Is it time to cash in?

The truth is, loggers have a hard time making a profit by cutting just a few trees. The time involved and the cost of hauling that log to a mill means they aren’t going to make anything off your tree, much less be able to pay you thousands of dollars for it. And odds are, the nearby sawmill won’t want the tree anyway. Most trees growing in a backyard environment aren’t the right size or condition for industry processing.

That tree can still stay out of the mulch pile. Contact your local forester or arborist about woodworkers who use walnut trees for furniture, art, and architectural accents.



Bourbon barrels are charred to enhance the flavor at McGinnis Wood Products.



Oak Barrels: Centuries-Old Design That Still Holds Water (or Wine or Whiskey)

Just a small percentage of Missouri's timber becomes the "staves" that make up the astounding 2.5 million oak barrels produced in Missouri every

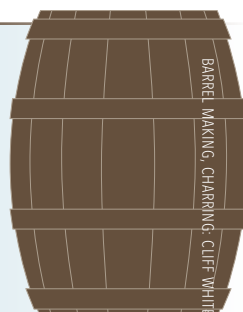
year. Those barrels end up all over the world, from the most exclusive wineries to the brand-name whiskey and spirits available at local grocery stores.

It hasn't always been that way.

McGinnis Wood Products, a cooperage in Cuba, will celebrate their 50th

2.5 million barrels produced annually in Missouri

12-18 per inch white oak's just-right number of growth rings that work best for barrel making



anniversary next year. They make close to 200,000 barrels every year now, and show no sign of slowing down.

“Back in the 1980s, national production demand for all wine and spirits was at about 800,000 barrels each year,” said Don McGinnis. “Last year, Jack Daniels alone needed 750,000.”

Missouri is a national leader in barrel production. The big white oak trees are plentiful here and work best for barrels because of the just-right number of growth rings per inch (about 12–18), and because they contain a gummy substance, called tyloses, that clogs the tree’s pores and helps prevent leakage.

Barrel creation starts with hundreds of big logs delivered to the cooperage every day. As the logs are processed, they eventually get sawn down to staves, which are the wood pieces cut precisely to become the sides of the barrel. If you pass by a mill where barrels are made, you will see millions of staves, stacked high, drying in the sun.

“We dry our wine barrel staves for three years,” said McGinnis. “Staves meant for whiskey air dry for a year, and then get a bit more time in a kiln.”

Throughout the process, it takes a skilled, strong hand to cut, assemble, and char barrels. At McGinnis’s cooperage, wine staves are produced as barrel kits that wineries assemble and toast to their own specifications. Bourbon barrels are assembled on site and then charred to a precise level for flavor. The last step is to test the barrels for leaks and plug any tiny holes.

“We put 2 gallons of water and 15 pounds of air pressure in each barrel, close it up, and look for leaks,” said McGinnis.

Just like sawmills that process trees into lumber, the scrap and sawdust never goes to waste at a cooperage. McGinnis sends about 30 truckloads of scrap each week to the Kingsford charcoal plant in Belle, and burns sawdust to generate steam for power.

Can Missouri white oaks keep up with demand for barrels?

McGinnis says he gets that question every day from the companies that purchase his barrels, and he had a special way to ease their fears.



Master Loggers and Professional Timber Harvester Training

How do we make sure Missouri’s trees are harvested responsibly? The department partners with the Missouri Forest Products Association and the Missouri Logging Council to offer two programs to help loggers meet the safety guidelines and best practices to keep Missouri’s forests growing strong for decades.

The **Professional Timber Harvester Program** provides chainsaw safety training and instruction on best management practices, which guide trained loggers to harvest timber while making sure the remaining trees, soil, and property are properly cared for.

The **Master Logger Program** is a certification program that recognizes training, experience, and performance. To qualify, loggers must have professional harvester training, but they are also audited to make sure they are compliant with all business and natural resource laws. Certified master loggers are in high demand across the state. Learn more about both programs at moforest.org.

“I remember a group from Jose Cuervo was worried there wouldn’t be any oak left,” he said. “Telling them we have millions of acres of woods doesn’t really paint a picture, so I took them up in a plane to see those woods from the air. It’s an impressive sight!”

McGinnis confirmed what most people in the forest products business believe — Missouri’s woods are prospering and here to stay, with plenty of opportunity to keep the industry going.

“When you cut down some of the big, old oak trees, you open up the canopy so the younger, healthy trees can grow, and that’s what they’re doing.”

Making Sure Missouri’s Woods are Here to Stay

Missouri’s forest products industry is not without its challenges. It needs to maintain a diversity of species and stay on top

of the emerging threats from pests and disease. The industry needs to make sure that plenty of healthy, high-quality trees remain after a timber harvest. Since most timber is harvested from privately owned woodlands, more private landowners need to develop forest management plans to address all of those concerns.

The outlook for Missouri’s woods is promising. The industry has learned to sustain the forests by carefully selecting trees to harvest and leaving plenty of strong, healthy trees behind. Our woods are working for us, moderating our climate, conserving energy, producing oxygen, cleaning our water, and giving us the lumber we need. ▲

Holly Dentner is a program supervisor in the forestry division. She enjoys helping Missourians understand the value of the state’s trees and forests.

Get Outside

in DECEMBER



→ Ways to connect with nature



Downy woodpecker

Red-bellied woodpecker

Pileated woodpecker

2 PASS THE SUET, PLEASE

Woodpeckers are looking for another food source this time of year — suet. Get your suet feeders ready and watch as downy, hairy, pileated, and red-bellied woodpeckers put their sharp, chisel-shaped bills to work.

1 SEE THE NATION'S BIRD

The majestic **bald eagle** is easier to see this time of year, catching fish at open water sources. See Page 5 for all the Eagle Days events that celebrate this national treasure.

NORTHEAST REGION

Waterfowl Hunting Clinics: Women's Duck Clinic/Hunt

3

Friday, Dec. 8 • 5:30–8:30 p.m.
and Saturday, Dec. 9 • 5 a.m.–1 p.m.
Northeast Regional Office
3500 S. Baltimore, Kirksville, MO 63501
Registration required, call 660-785-2420 by Dec. 4

This women's event is an opportunity to learn tactics for a successful waterfowl season. Identification, cover, decoys, and calling are just a few of the topics covered during the Friday evening clinic. A hunt will take place the following morning. Weather and bird activity will determine the exact location. It is recommended that participants practice shooting trap or sporting clays, or take a basic shotgun course before attending the event.

Natural Events to See This Month

Here's what's going on in the natural world.



Black bear cubs are born



Eastern cottontail rabbits use abandoned dens during heavy snowfalls



Squirrels gather in nests to conserve energy

Find more events in your area at mdc.mo.gov/events



SOUTHWEST REGION

Fishing Skills: Winter Fly-Fishing for Beginners

4

Saturday, Dec. 16 • 8 a.m.-12 p.m.

Roaring River Hatchery

24390 Farm Road 1135, Cassville, MO 65625

Registration required, call 417-847-2430 by Dec. 15

Learn about trout management, fishing rules and regulations, fly-fishing, and fish cleaning and preparation. All equipment will be provided, but bring your own if you desire.



5

GOOSE CALL

Canada geese make a surge this time of year. In fact, their population is at its peak in the Show-Me State. Get out and see how many you can find.

6

MIDWINTER LOVE CALLS

Red foxes begin mating this month. Listen for their barks and squalls. See Page 32 for more information on the red fox.



Beavers feed on sapling reserves



Raccoons take to their dens during snow and ice storms

Xplor

INSPIRE THE
CHILDREN
IN YOUR LIFE
TO GET OUTSIDE



Looking for a way to coax your kids to put down their devices, climb off the couch, and get outside? Then check out **Xplor**, MDC's free magazine for kids and kids at heart.

Six times a year, **Xplor** serves up stories about Missouri's coolest critters, niftiest natural places, and liveliest outdoor activities. The magazine is free to Missouri residents (one subscription per household, please). Out-of-state subscribers pay \$5 per year; Out-of-country subscribers pay \$8.

DON'T KEEP THE DOOR CLOSED ANY LONGER. SIGN UP FOR YOUR FREE SUBSCRIPTION AT mdc.mo.gov/xplor



Serving nature and you®



Places to Go

SOUTHEAST REGION

Ten Mile Pond Conservation Area

Abundant waterfowl draw hunters ... and more

by Larry Archer

✧ Like most conservation areas, Ten Mile Pond Conservation Area (CA) in southeast Missouri's Mississippi County is off the beaten path, but this time of year, there's plenty of traffic, according to Wildlife Management Biologist Josh Hager, the area's manager.

"During December, we're pretty much exclusively open for waterfowl hunting," Hager said. "Everything else shuts down, and we're pretty much a managed hunt for waterfowl."

The 3,755-acre area's location in the Mississippi River flyway, and its combination of managed wetlands and cropland, makes Ten Mile Pond CA a destination for migrating and wintering waterfowl.

That, in turn, makes the area, one of the department's 15 intensively managed wetlands, a destination for waterfowl hunters. Throughout the waterfowl season, up to 100 prospective hunters regularly show up before dawn to draw for one of the area's 12 to 22 hunting spots. And waterfowl hunters are not the only ones attracted to the abundant game, Hager said.

"The eagles feed on the snow geese pretty heavily," he said. "You can find an eagle most days down here, but where you might find one or two in the fall, there might be 60 or 80 during the winter when the snow geese are here."

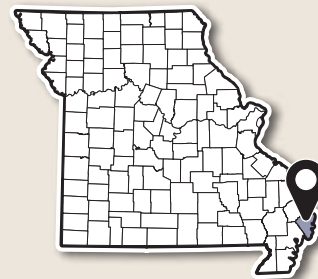


In the winter months, the wetlands at Ten Mile Pond CA in southeast Missouri draw a variety of waterfowl and shorebirds, including large flocks of mallards.

"We manage for migrating and wintering waterfowl. That's our number-one goal."

—Ten Mile Pond CA Manager Josh Hager

NOFPADOL PAOTHOONG



TEN MILE POND CONSERVATION AREA

consists of 3,755 acres in Mississippi County. From East Prairie, take Highway 80 east, then take gravel County Road 515 south 5 miles to the tee. At the tee, go left 300 yards to headquarters on the right.

N36° 42' 10.6632" | W89° 20' 26.0124"
short.mdc.mo.gov/Z5b 573-649-2770

WHAT TO DO WHEN YOU VISIT



Bird Watching Included on the Great Missouri Birding Trail (greatmissouribirdingtrail.com). Sizeable populations of waterfowl, shorebirds, and eagles during December.



Dog Training Dog training is allowed in designated areas from the end of the south zone waterfowl season through Oct. 31.



Hunting
Waterfowl (good). Waterfowl hunting requires a valid daily tag, issued at area headquarters. A drawing for units is held each morning during waterfowl season. Waterfowl regulations are subject to annual changes, so refer to the *Waterfowl Hunting Digest* for current regulations.

Deer (good). Deer regulations are subject to annual changes, so refer to the *Fall Deer and Turkey* booklet for current regulations.

Dove (good). This area has a managed dove hunt. Contact area headquarters for more information.

WHAT TO LOOK FOR WHEN YOU VISIT



White-tailed deer



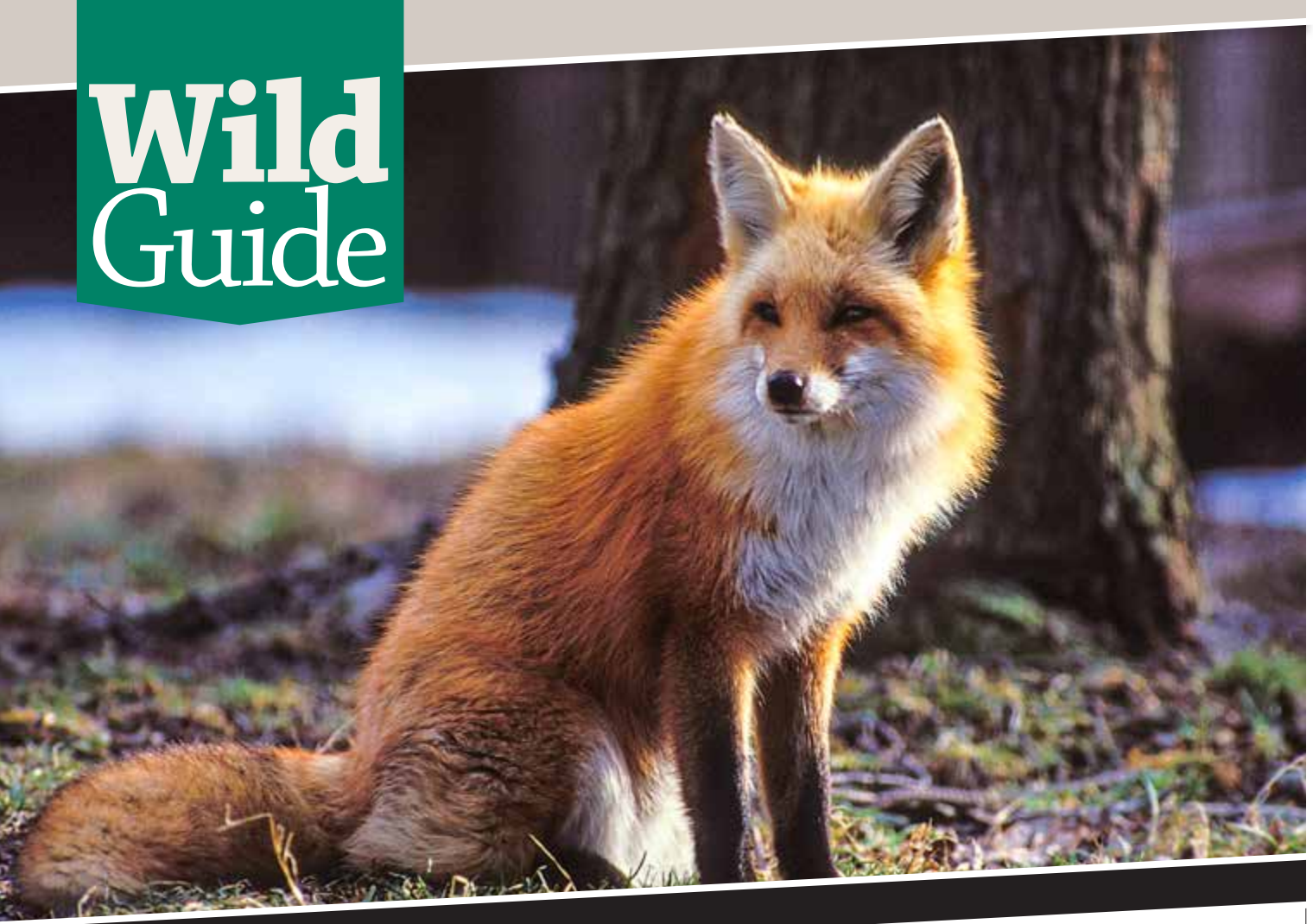
Snow geese



Horned lark



Bald eagle



Red Fox

Vulpes vulpes

Status	Size	Distribution
Common	Length: 12½–46 inches, weight: 7½–15 pounds	Statewide, most common in the north and west



Did You Know?

Red foxes only use dens during the breeding season. Most of the year, red foxes sleep on the ground in a convenient, sheltered spot. They prefer the borders of forested areas and adjacent open lands, avoiding dense and extensive forests.

Doglike in appearance with their elongated muzzle, large pointed ears, long legs, and bushy tail, red foxes have a distinct red, thick, soft fur that distinguishes them from their canine cousins. These rascally creatures like to hang around hen houses when they're with their buddies. To deter them, reduce vegetation around poultry houses, provide an enclosed area for chickens, and employ an alert dog.



LIFE CYCLE

Mating usually occurs in January and February, with litters of four to seven kits born in March or April. The kits emerge from the nest at about a month old, and at 10 weeks, they leave the den area for the first time to accompany their parents on hunting trips. Foxes are chiefly nocturnal but may come out during the day, especially at dawn and dusk.



FOODS

Rabbits, rats, and mice form the bulk of a fox's diet. Additional items include other small mammalian species, wild birds, insects, and only a small amount of plant material. To a certain extent, they do feed on small livestock and poultry, but the economic loss is not as great as it appears because some of this is carrion.



ECOSYSTEM CONNECTIONS

Foxes feed on rodents and help keep these pests in check.

Outdoor Calendar

✱ MISSOURI DEPARTMENT OF CONSERVATION ✱



FISHING

Black Bass

Impounded waters and most streams north of the Missouri River:
Open all year

Most streams south of the Missouri River:
May 27, 2017–Feb. 28, 2018

Nongame Fish Gigging

Streams and Impounded Waters,
sunrise to midnight:
Sept. 15, 2017–Jan. 31, 2018

Paddlefish

On the Mississippi River:
Sept. 15–Dec. 15, 2017

Trout Parks

Catch-and-Release:
Nov. 10, 2017–Feb. 12, 2018

TRAPPING

Beaver, Nutria

Nov. 15, 2017–March 31, 2018

Other Furbearers

Nov. 15, 2017–Jan. 31, 2018

Otters, Muskrats

Nov. 15, 2017–Feb. 20, 2018

Rabbits

Nov. 15, 2017–Jan. 31, 2018



Free MO Hunting and MO Fishing Apps

MO Hunting makes it easy to buy permits, electronically notch them, and Telecheck your harvest.

MO Fishing lets you buy permits, find great places to fish, and ID your catch. Get both in Android or iPhone platforms at short.mdc.mo.gov/Zi2.

HUNTING

Coyote

Restrictions apply during April, spring turkey season, and firearms deer season.

Open all year

Crow

Nov. 1, 2017–March 3, 2018

Deer

Archery:
Nov. 22, 2017–Jan 15, 2018

Firearms:

- ▶ Antlerless Portion (open areas only):
Dec. 1–3, 2017
- ▶ Alternative Methods Portion:
Dec. 23, 2017–Jan 2, 2018

Groundhog (woodchuck)

May 8–Dec. 15, 2017

Pheasant

Regular:
Nov. 1, 2017–Jan. 15, 2018

Quail

Regular:
Nov. 1, 2017–Jan. 15, 2018

Rabbit

Oct. 1, 2017–Feb. 15, 2018

Squirrel

May 27, 2017–Feb. 15, 2018

Turkey

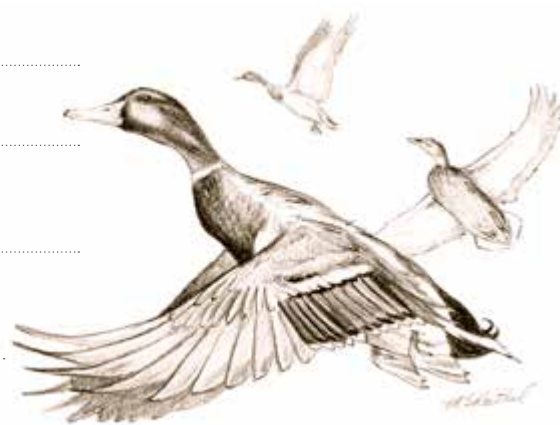
Archery:
Nov. 22, 2017–Jan. 15, 2018

Waterfowl

See the Waterfowl Hunting Digest or visit short.mdc.mo.gov/ZZx for more information.

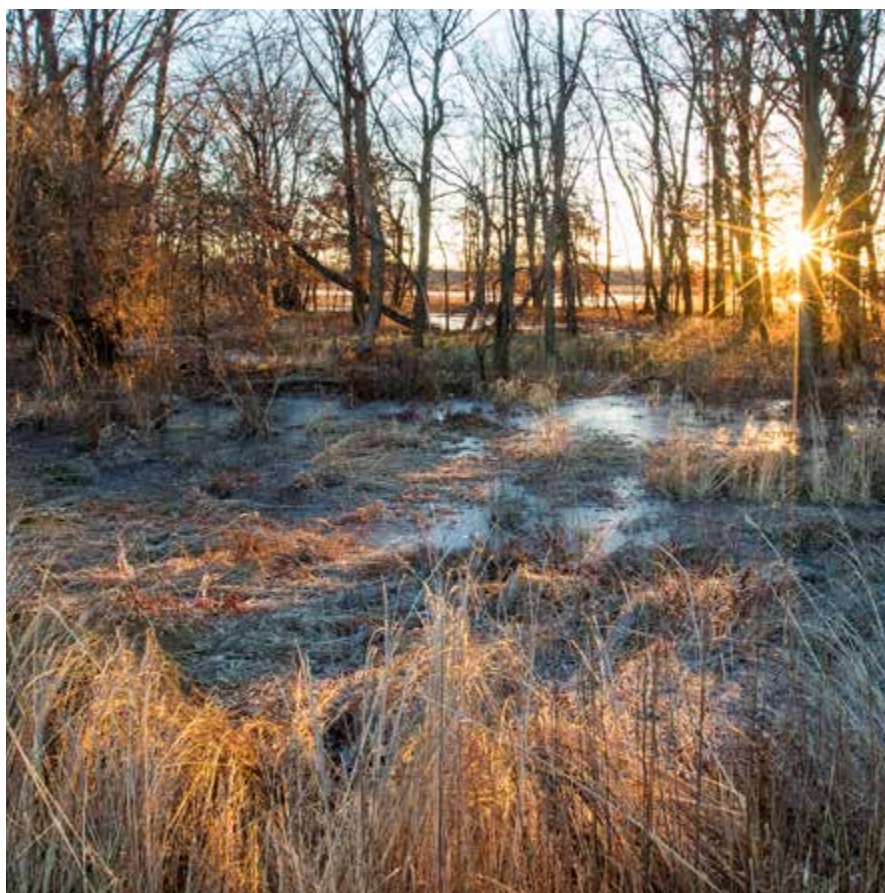
Wilson's (Common) Snipe

Sept. 1–Dec. 16, 2017



For complete information about seasons, limits, methods, and restrictions, consult the *Wildlife Code of Missouri* at short.mdc.mo.gov/Zib. Current hunting, trapping, and fishing regulation booklets are available from local permit vendors or online at short.mdc.mo.gov/ZZf.

Lifetime permits make great gifts!
For more information, call 573-522-0107
or email lifetime.permit@mdc.mo.gov



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It may be cold outside, but it's still a great time to get out and discover nature. Beautiful sunrises like this one at Fountain Grove Conservation Area near Meadville and much more await you at nearly 1,000 conservation areas across the state. What will you discover today?

📷 by **David Stonner**

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